



science for people, life & earth

INRAE

French national research institute for
agriculture, food & environment

INRAE is a broad community of people who are committed to tackling this century's challenges & guiding the transformations that will affect agriculture, food, & the environment

a word from the CEO



INRAE, the new French National Research Institute for Agriculture, Food, and the Environment, emerged from the merger of INRA and IRSTEA. Although these two institutes differed in their sizes, approaches, and research specialties, they shared an interest in three key themes: agriculture, food, and the environment.

With the Ministry of Higher Education, Research, and Innovation and the Ministry of Agriculture and Food, we initiated the merger in February 2018 following a period of reflection during which the institutes evaluated the proposed project. We came out of the evaluation period convinced of the new institute's research potential and the strong synergies it could create.

This fusion of two public research institutions is unique. It required more than two years of work and close collaboration between our two communities, as well as a continual dialogue with all our employees, scientists and support staff alike. The ultimate goal was for the new

institute to display the best possible hybrid of its predecessors' strengths. There remains much to do, but based on the project's quality, strategic choices, and guiding spirit, INRAE's future holds great promise. As I write these words, we are building our new research community via a participatory process: our strategic plan—INRAE 2030—will be presented to and discussed with the diverse social and economic stakeholders with whom we partner.

In our rapidly changing world, we need to guide transitions by inventing the agricultural and food systems of the future while simultaneously protecting and restoring our environment. We must also promote an economy that is based on renewable resources and characterised by both economic growth and social responsibility. The stakes are unprecedented.

We know that the world is expecting research-based solutions. Given what lies ahead, I am proud to be working with a committed and unified group of people who are keenly aware of the societal challenges we are facing. I know that I will be able to count on each and every one of you to help build our sustainable future by working towards the greater good with confidence and determination.

Philippe Mauguin
Chair and Chief Executive Officer

Vision & missions



Humankind and the planet are facing global changes that will create new challenges for research to address: limiting the effects of and adapting to climate change; increasing food security and nutrition security; transitioning to new agricultural systems; preserving natural resources; restoring biodiversity; and anticipating and managing risks. It will also be important to consider more regional issues like living conditions, farmers' salaries, the economic competitiveness of companies, land use, and universal access to healthy and varied diets.

As the world's top institute for research on agriculture, food, and the environment, INRAE has a responsibility to address these concerns. It will use research, innovation, and support for public policies as tools to permanently transform how we grow food, produce food, and interact with the environment. The institute aims to carry out science dedicated to life, humans, and the Earth that uncovers solutions to our greatest challenges.

Thanks to its diverse research teams, INRAE produces ready-to-use research, via a process in which basic science and applied science go hand in hand and discipline-specific perspectives are paired with interdisciplinary approaches. In this work, INRAE can rely on a network of research infrastructures and experimental research units that has no equal in Europe.

The institute firmly believes that science should be open and participatory. As part of France's dynamic network of research institutes and establishments of higher education, INRAE contributes to local policies and French thematic research alliances. Thanks to its international partnerships, the institute collaborates with the best research teams in Europe and the world.

For the common good, INRAE applies a code of ethical practices rooted in responsibility, impartiality, integrity, dignity, and probity in its all of its scientific work and management practices. The institute is ready to partner with and provide support to any stakeholders who are facing challenging transitions towards more sustainable agricultural systems, food systems, aquatic systems, forestry systems, or regional systems. INRAE is actively pursuing new types of knowledge and proposing novel solutions.

These words are more than a goal. They are a promise.



The world's number one institute for research on agriculture, food, and the environment*

* Based on the Web of Science (WOS) specialisation index score: INRAE's representation within the 10 following research domains/ INRAE's representation within all the WOS research domains at the international scale: Agriculture, Plant sciences, Veterinary sciences, Genetics & heredity, Food science & technology, Nutrition dietetics, Biotechnology & applied microbiology, Environmental sciences & ecology, Water resources, Microbiology.





An ambitious & collaborative research strategy

As a targeted research institution, INRAE aims to generate, disseminate, and exploit knowledge, technology, and expertise to inform and promote transitions in agricultural systems and food systems and to develop strategies for preserving the environment.

Researchers at INRAE

- ▶ produce and disseminate knowledge to help solve major societal challenges
- ▶ put this knowledge to work to foster innovation, provide training and expertise, and inform public policies
- ▶ collaborate with a broad diversity of stakeholders (e.g., from academia, the socio-economic sphere, non-profit organisations) and everyday citizens

INRAE's approach involves

- ▶ interdisciplinary foresight analysis of current challenges
- ▶ research at the frontiers of knowledge that encourages breakthroughs
- ▶ academic partnerships at regional, national, European, and international scales that are firmly tied to regional structures within the system of higher education and research
- ▶ partnerships with various stakeholders in the field, such as farmers, private companies, NGOs, and regional governments
- ▶ open-source tools for promoting innovation that allow the free exchange of ideas, knowledge, and experience
- ▶ infrastructures that enhance the sharing of research and data
- ▶ conversations with the general public to explain, debate, and contribute



«At INRAE, we are all enthusiastic about doing research that will help the planet and its inhabitants»

Christine Cherbut

INRAE 2030, a participatory project

Drawing on the strength of its research community, INRAE is committed to collectively building its strategic plan for the coming decade. The institute invites all its collaborators to take part in this unifying project, which is both ambitious and realistic. The plan only stands to benefit from the ensuing exchange.

Tackling the major complex challenges faced
by humanity and the planet

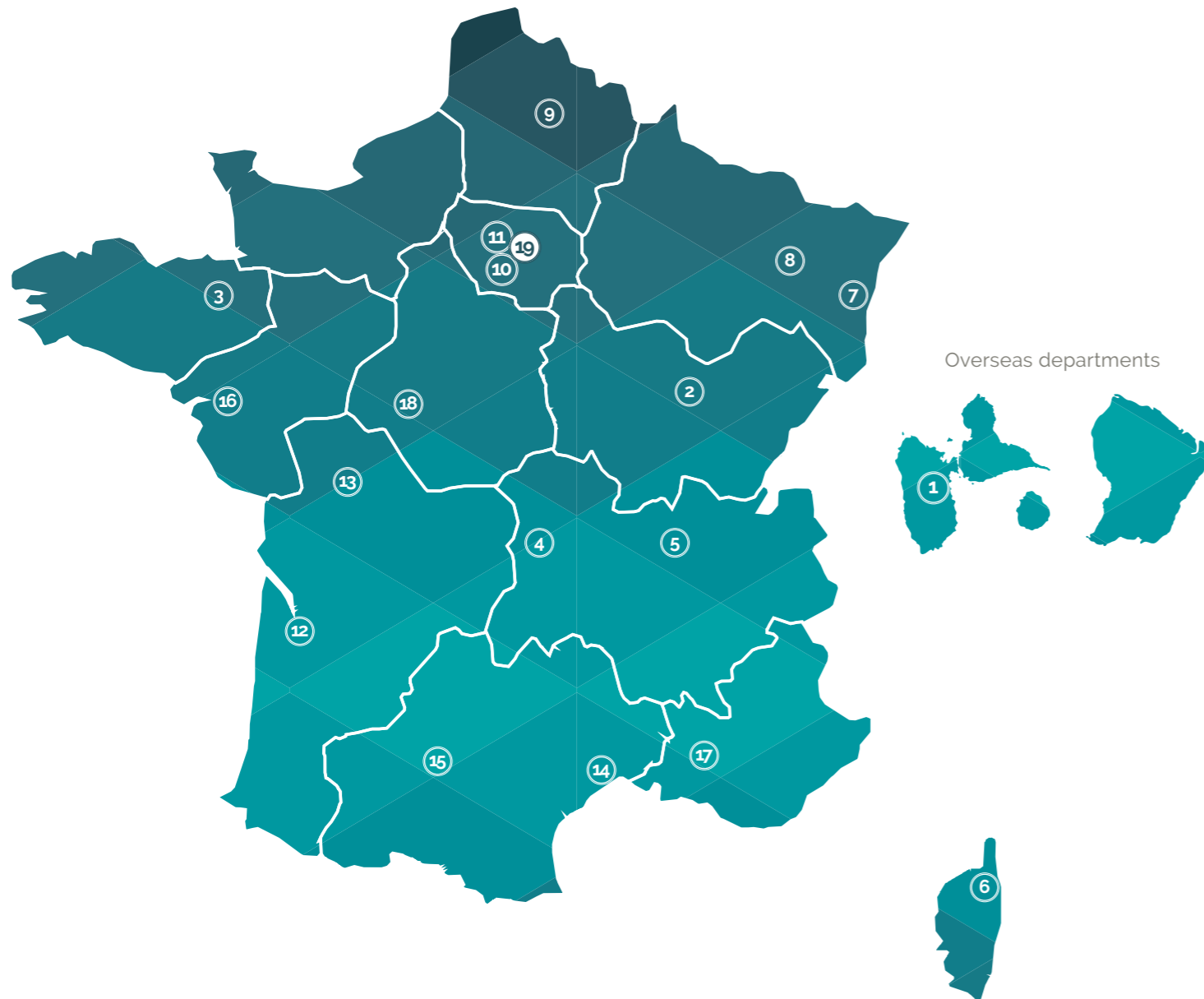


An organisation that works to produce knowledge, foster innovation, provide expertise, and inform public policies



The centres

With its 18 research centres, INRAE is anchored in all of France's regions. The institute's headquarters are split between two locations.



- ① **French Antilles and French Guiana**
President: Harry Ozier-Lafontaine
- ② **Burgundy-Franche-Comté**
President: Nathalie Munier Jolain
- ③ **Brittany-Normandy**
President: Hélène Lucas
- ④ **Clermont - Auvergne-Rhône-Alpes**
President: Emmanuel Hugo
- ⑤ **Lyon-Grenoble - Auvergne-Rhône-Alpes**
President: Pascal Boistard
- ⑥ **Corsica**
President: François Casabianca
- ⑦ **Grand Est-Colmar**
President: Serge Kauffmann*
- ⑧ **Grand Est-Nancy**
President: Meriem Fournier
- ⑨ **Hauts-de-France**
President: Jean Tayeb
- ⑩ **Île-de-France - Jouy-en-Josas-Antony**
President: Thierry Pineau
- ⑪ **Île-de-France - Versailles-Grignon**
President: Camille Michon
- ⑫ **Nouvelle-Aquitaine-Bordeaux**
President: Olivier Lavialle
- ⑬ **Nouvelle-Aquitaine-Poitiers**
President: Abraham Escobar-Gutierrez
- ⑭ **Occitanie-Montpellier**
President: Sylvain Labbé
- ⑮ **Occitanie-Toulouse**
President: Pierre-Benoit Joly
- ⑯ **Pays de la Loire**
President: Emmanuelle Chevassus Lozza
- ⑰ **Provence-Alpes-Côte d'azur**
President: Jean-Philippe Nabot
- ⑱ **Val de Loire**
President: Catherine Beaumont
- ⑲ **Headquarters in Paris-Antony**
Head administrator: Karine Gueritat

* As of February 1, 2020

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The divisions

INRAE has 14 scientific divisions that are tied to specific disciplines but that strongly encourage interdisciplinarity



AGROENV

Creation and evaluation of agroecosystems; characterisation of agroecosystem functions and changes at different organisational scales

Division head:
Philippe Hinsinger



ALIM. H

Relationships between food, health, the environment, and society; nutrition security and food toxicology

Division head:
Jean Dallongeville



G.A.

Evolutionary dynamics and functions of animal genomes; genetic architecture of traits; management and exploitation of genetic variability

Division head:
Edwige Quillet



MICA

Functioning, management, and exploitation of micro-organisms and microbial ecosystems (food, health, biotechnology)

Division head:
Sylvie Dequin



NUMM

Mathematics, informatics, and artificial intelligence; data and digital sciences and technologies; modelling and complex systems

Division head:
Hervé Monod



PHASE

Creation of sustainable livestock systems that account for animal welfare; mechanisms behind the development of phenotypes, behaviours, and products

Division head:
Françoise Médale



AQUA

Functions of and changes in aquatic ecosystems, the water cycle, and biogeochemical cycles

Division head:
Mohamed Naaim



BAP

Characterisation of the main functions of plants; management and exploitation of genetic diversity

Division head:
Isabelle Litrico-Chiarelli



S.A.

Links between livestock health and human health: preventing, detecting, and fighting diseases caused by infectious agents and chemical agents

Division head:
Muriel Vayssier-Taussat



S.P.E.

Environmentally friendly plant - to landscape-level approaches to protecting crops and crop health

Division head:
Christian Lannou



ECOFA

Structures, functions, and changes observed in continental ecosystems little affected by humans

Division head:
Catherine Bastien



ECOSOCIO

Functions, economic changes, and social changes associated with agriculture, the agrifood industry, food consumption, and the environment

Division head:
Alban Thomas



TERRA

Transformations in agriculture, socio-ecological systems, and food systems from the perspectives of stakeholders and as manifest in their actions

Division head:
Benoît Dedieu



TRANSFORM

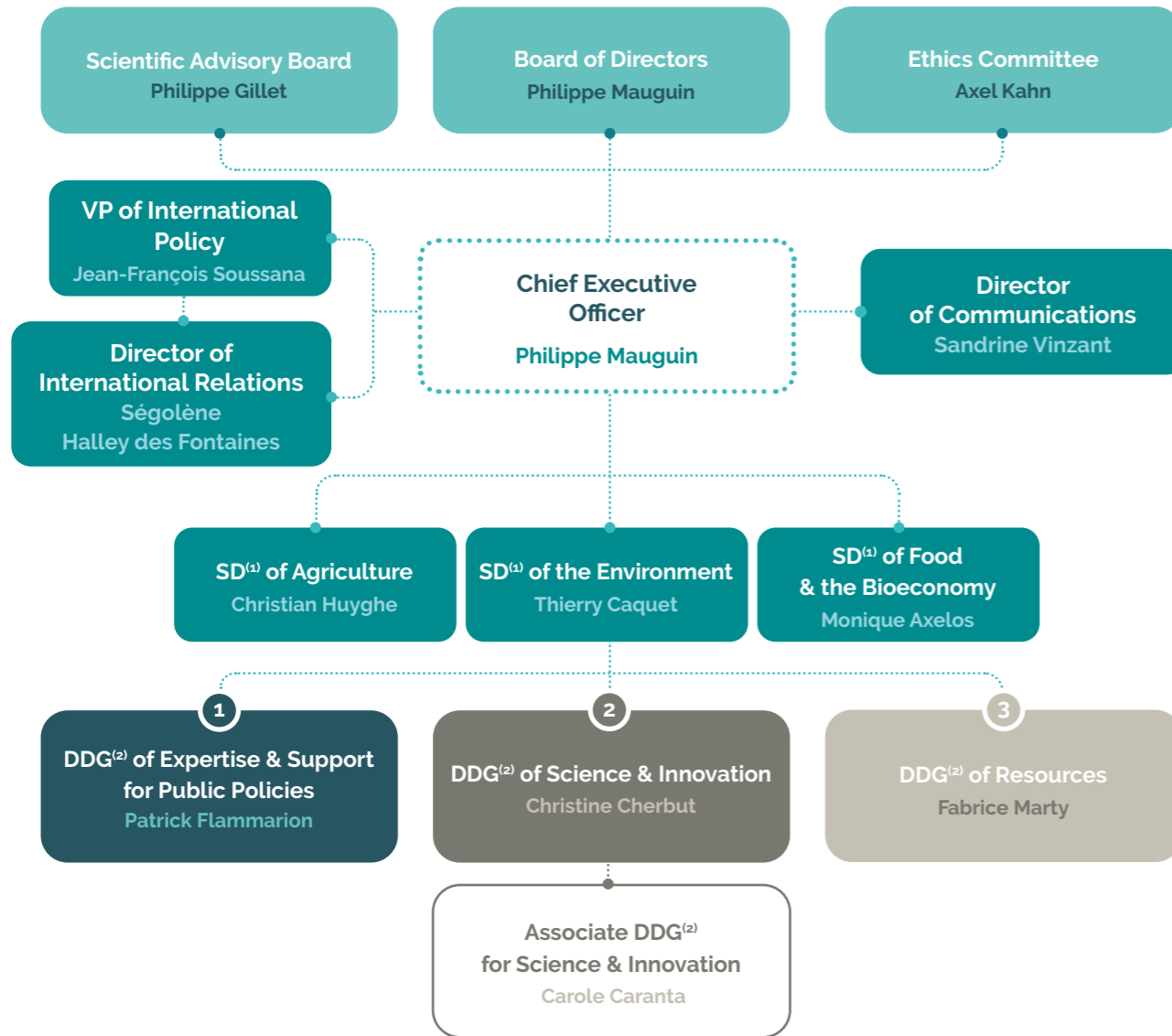
Processes for transforming organic matter into food and bio-based products; exploiting waste produced by human activities

Division head:
Michael O'Donohue

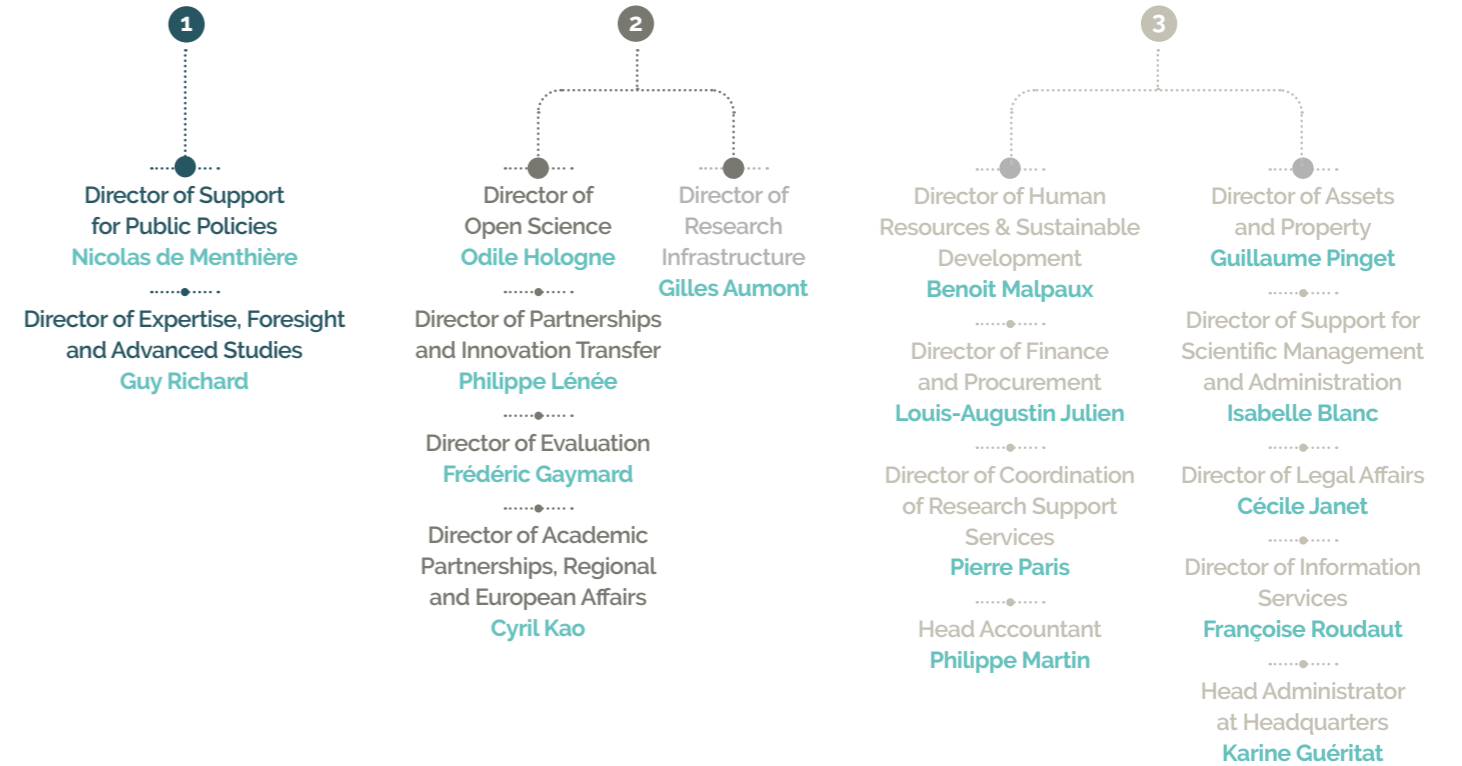
An organisation that works to produce knowledge, foster innovation, provide expertise, and inform public policies



Our structure



⁽¹⁾ Scientific Director
⁽²⁾ Deputy Director General



A group of diverse people are sitting in a circle on the floor, engaged in a discussion or meeting. The image is a close-up, focusing on their hands and arms as they gesture and interact. The lighting is soft and natural, creating a collaborative and open atmosphere. The background is slightly blurred, emphasizing the group's interaction.

**A firm belief that science should be
open and participatory**






Support for public policies

INRAE's directorate for expertise and support for public policies encourages the transformation of scientific knowledge into expertise, foresight studies, and support for the creation and implementation of public policies. The purpose is to anticipate the challenges society will face.

By transferring its research results to policy stakeholders, policy-makers, ministries, national agencies, regional governments, the European Commission, and/or international organisations, INRAE embraces a collaborative approach that balances long-term perspectives and current policy priorities. These exchanges enrich the institute's work, infuse its research with relevance, and contribute to societal debates.

The goal of this directorate is to

- help policy-makers exploit recent research discoveries in the fields of agriculture, food, and the environment; the results of INRAE foresight studies; and INRAE's ability to incorporate knowledge via a transversal approach
- build close collaborations with policy-makers at local to international scales
- offer expertise that provides a standard of reference at the national, European, and international level
- employ innovative tools and participatory processes to provide expertise and support for public policies



“We must anticipate the major challenges we will face, contribute to societal debates, and inform public policies»

Patrick Flammarion



Partnerships & innovation transfer

A wide range of collective tools are found within research infrastructures, which are organised into national and European roadmaps.

Our socio-economic partnerships are centred on certain spheres of innovation and are linked to several Carnot Institutes.

Actions that foster a culture of innovation

- All invention disclosures and exploitable results are subject to in-depth assessments to determine the form that innovation should take (e.g., patents, software, serious games, plant variety certificates).
- Research teams are trained to exploit their findings and transform them into innovations via workshops focused on creating value from research.
- INRAE holds one-day workshops on business creation to help guide individuals who wish to create their own companies.

A network dedicated to helping scientists exploit and transform their results

- 40 engineers help researchers put together, carry out, and manage projects across all of France
- 15 staff members in charge of partnerships and innovation are tasked with discovering new collaborators as well as identifying and developing innovation-generating projects; their responsibility is to provide support for the target strategy in each domain of innovation
- 10 staff members in charge of value creation are responsible for promoting inventions, facilitating the transfer of results towards socio-economic partners, and helping create new companies



40

engineers help researchers manage their projects

15

staff in charge of partnerships and innovation

10

staff in charge of value creation



Europe & the World

Powered by its European and international partnerships, INRAE is committed to playing a key role in the transformation of knowledge into concrete, sustainable solutions.

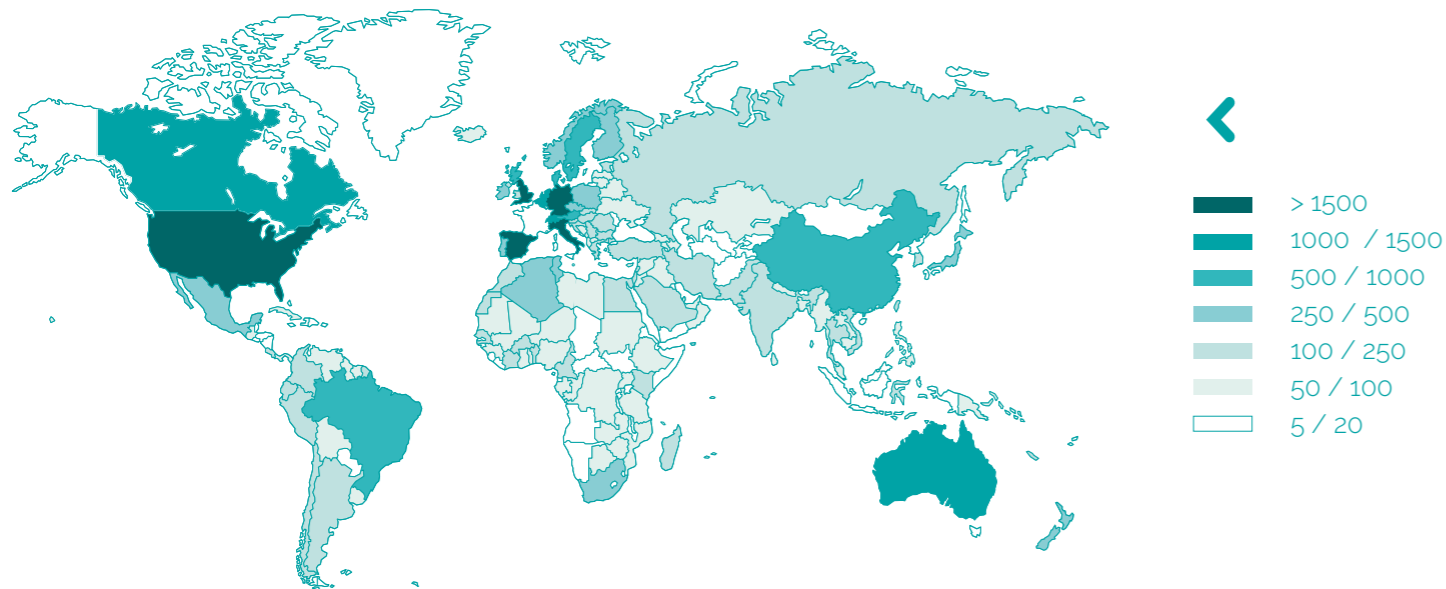


«The support that institutes in the European Union provide to international collaborators creates synergies between Europe and the rest of the world»

Jean-François Soussana

Map of publications co-authored by INRAE scientists

Data from Web of Science InCites Clarivate Analytics - 2014-2018 (InCites dataset 26/09/19)



European partnerships

INRAE plays a major role in advancing European research. The institute coordinates and participates in numerous European projects and contributes to shared infrastructures.

- **Research projects:** INRAE participated in 166 European research projects (acting as coordinator in 49 cases) in 2019
- **Infrastructure:** INRAE is head or part of 7 ESFRI projects (which involve collaborations among European countries) and 11 projects aimed at solidifying research infrastructures (which involve collaborations among European research institutes)

Active collaboration with European and international partners

INRAE actively takes part in EU-funded programmes. The institute is building structured partnerships with European collaborators via joint research programmes focused on water resources and climate change and via networks of European institutes, such as the Partnership for European Environmental Research (PEER). INRAE's international partnerships take three forms:

- **International associated laboratories (LIAs):** laboratories without borders, where we work side-by-side with our international collaborators to build shared long-term projects of excellence
- **International research networks:** we join networks that are focused on specific research themes
- **Priority projects of international scope:** we help structure tools and resources to boost research in specific subject areas

The priority project of international scope «Soils and climate change»

emerged from the 4 per 1000 initiative proposed by France during the 2015 United Nations Climate Change Conference (COP 21). It has established a global research alliance (during a preparation phase funded by the European Commission) that is linked to innovation-focused projects centred on carbon storage and carbon monitoring in soils, notably via the Climate Knowledge and Innovation Community (Climate KIC).

166
European research projects

Scientific solutions for
life, humans, and the Earth





Human resources & attractive working conditions

With a staff of over 12,000 people, an annual budget of more than 1 billion euros, and an unparalleled wealth of expertise, INRAE embodies a different approach to collective action and is committed to making broad strides in sustainable development. To this end, it will use first-rate human resource strategies.

➤ Human Resources Excellence in Research Award from the European Commission

INRAE received the European Commission's Human Resources (HR) Excellence in Research Award because of its high-quality recruitment, hiring, and training practices as well as its work to promote healthy psychological and social working conditions. The institute remains committed to applying this HR approach to create a favourable work environment for all its staff.



➤ A commitment to equality and diversity

INRAE has a gender equality policy that promotes the representation of women in all areas and at all levels of responsibility. Its diversity policy ensures a level playing field for everyone when it comes to hiring decisions and career advancement. Notably, INRAE is committed to the greater inclusion of people with disabilities. This policy reflects the institute's belief that a diverse and multicultural workforce is a valuable resource. INRAE should be granted equality and diversity certification by AFNOR in early 2020.



➤ We firmly believe that promoting a healthy work-life balance

is important to fostering positive working conditions. INRAE provides attractive employee benefits to staff at all levels. These include flexibility in defining one's work shift and location, the option to telecommute, the option to work part-time, and structural support during life transitions.

Strengthening our level of commitment



- By encouraging kindness, respecting the right to make mistakes, and promoting openness to the world
- By demonstrating our commitment to sustainability through our actions, such as limiting our greenhouse gas emissions via researcher mobility policies, purchasing decisions, the use of digital tools, and optimised building management; using more sustainable management methods during our research projects; and transforming our 11,000 hectares of experimental land into unique biodiversity hotspots



«Working at INRAE gives me an opportunity to express my values through my work»

Fabrice Marty

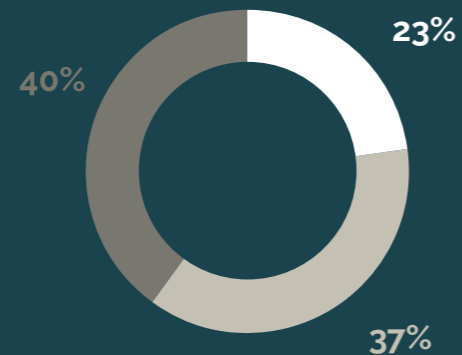


Key Figures

Combined data from 2018 for INRA and IRSTEA

Personnel

(employees at INRA and IRSTEA in 2018)



- > 1,965 researchers
- > 3,115 engineers and assistant engineers
- > 3,333 technicians

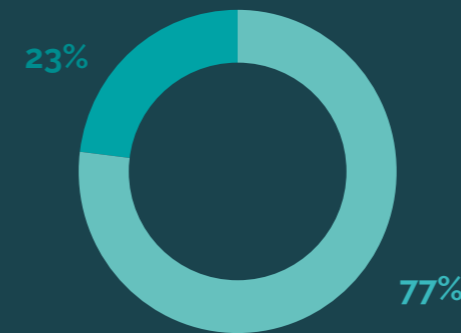
Structure

18
centres

14
scientific divisions

268
research units,
experimental research units, and support units

Budget



Resources:
€1.0271 billion

- > €794.9 M in public subsidies from the French government
- ✓ €232.2 M in autonomous resources

€184 M in autonomous resources produced by research contracts

€48.2 M in autonomous resources from other sources

Partnerships & innovation transfer

Socio-economic partnerships

- More than 450 socio-economic partners
- €30.9 M in revenue
- 5 Carnot Institutes

Intellectual property

- 156 invention disclosures & exploitable results
- 46 patent applications filed

Value creation from research results

- 97 new licenses requested for patents, expertise, software, & plant variety certificates
- €9.1 M of revenue obtained from patents, consultancy work, software, and plant variety certificates

Business creation

- 137 start-ups home grown at INRAE since 1999

Education

- 2,000 PhD students (40% from foreign countries)
- INRAE is partnered with 33 local universities across France



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